

MS-DOS Ver. 3.20 Rev. 4.xx

The software included with this Software Kit has the following features:

- supports 720 KB and 1.44 MB 3 1/2 inch Floppy Disk Drives (read Chapter 2 "How To Install Your Software" for details)
- includes disk cache software, called OLICACHE.SYS (read "The Disk Cache System", Appendix H of the MS-DOS User Guide for details)
- has a new revision of GW-BASIC, which includes support for the OEC display controller (read the "MS GW-BASIC Interpreter User Guide" for details).

If you have 1.44 MB 3 1/2 inch floppy disk drive(s)...

Before you format, read or write a 1.44MB 3 1/2 inch floppy disk in a 1.44 MB Floppy Disk Drive, you must have run the SETUP option of Customer Test to indicate the presence of the 1.44 MB Drive(s). See your Computer's Installation and Operation Guide for information on how to run SETUP.

If you have 720 KB 3 1/2 inch floppy disk drive(s)...

You will require DRIVPARM command(s) in your CONFIG.SYS. Be careful to use the DRIVPARM parameters exactly as specified in the Section "Floppy Disk CONFIG.SYS" in Chapter 6 ("Configuring and Initializing MS-DOS"). Pay particular attention to the DRIVPARM examples.

WARNINGS

CONFIGURING MS-DOS WITH DRIVPARM AND DRIVER.SYS

Only use DRIVPARM and DRIVER.SYS with parameters appropriate to the hardware device(s) connected to your computer. See this manual or the installation manual for details of the device and the correct parameter settings. It is recommended that end-users ask their dealers or qualified personnel for assistance in using DRIVER.SYS or DRIVPARM.

If you have a hard disk...

After you have installed MS-DOS Version 3.20 on your hard disk, do not use old versions of MS-DOS or non-Olivetti versions of MS-DOS (PC-DOS) and then access your hard disk. Doing so may corrupt your hard disk.

OLIMENU

OLIMENU is a member of the OLISOFT family of application programs. It is used to create a series of interconnected menus. By selecting an item on a menu it is possible to call an application program, or an internal or external MS-DOS command.

The OLIMENU program and accompanying documentation is to be found in a directory called OLIMENU. If you have a 3 1/2 inch MS-DOS System diskette, the OLIMENU directory will be on this diskette. If you have 5 1/4 inch MS-DOS diskettes, the OLIMENU directory will be on the Supplementary diskette.

To find out about this program and the OLISOFT family, bootstrap the computer with the MS-DOS System disk, make sure that the diskette containing OLIMENU is in the "A:" drive, then change directory to the OLIMENU directory. At the "A>" prompt, type:

OLM
then press ENTER

The menu that is displayed has the following two items:

OLISOFT family	choosing this option displays general information about OLIMENU and the OLISOFT family.
-----------------------	---

READ ME	choosing this option displays the OLIMENU manual. (The file containing the OLIMENU manual is called OLM.DOC, this is an ASCII text file which can be printed.)
----------------	--

To select either of these items: move the cursor to the required item and press ENTER; or type in the first character of the required item.

PREFACE

This publication is an installation guide for the MS-DOS operating system. It describes the installation of Microsoft MS-DOS Version 3.20 on an Olivetti Personal Computer.

SUMMARY

The first chapter of this guide presents the contents of the MS-DOS Software Kit; this includes a section where GW-BASIC introduces itself as a programming language that anybody can use. The other chapters tell the user how to install the MS-DOS operating system onto his computer. Chapter 3 covers installation of National keyboard drivers and fonts. Chapter 4 covers installing MS-DOS on floppy disk based systems. Chapter 5 covers installing MS-DOS on hard disk based systems. Chapter 6 tells the user how to configure his operating system for optimal running. Finally there is an appendix, which contains diagrams of all the keyboards which can be connected to the various Olivetti Personal Computers.

PRE-REQUISITE PUBLICATIONS:

Installation and Operations Guide for your Personal Computer.

RELATED PUBLICATIONS:

MS-DOS User Guide (Code 4034460 Z)

MS-DOS Quick Reference Guide (Code 4034470 S)

A Simple To Using MS-DOS (Code 4033480 N)

MS GW-BASIC Interpreter under MS-DOS User Guide
(Code 4034490 C)

MS GW-BASIC under MS-DOS Quick Reference Guide
(Code 4034510 W)

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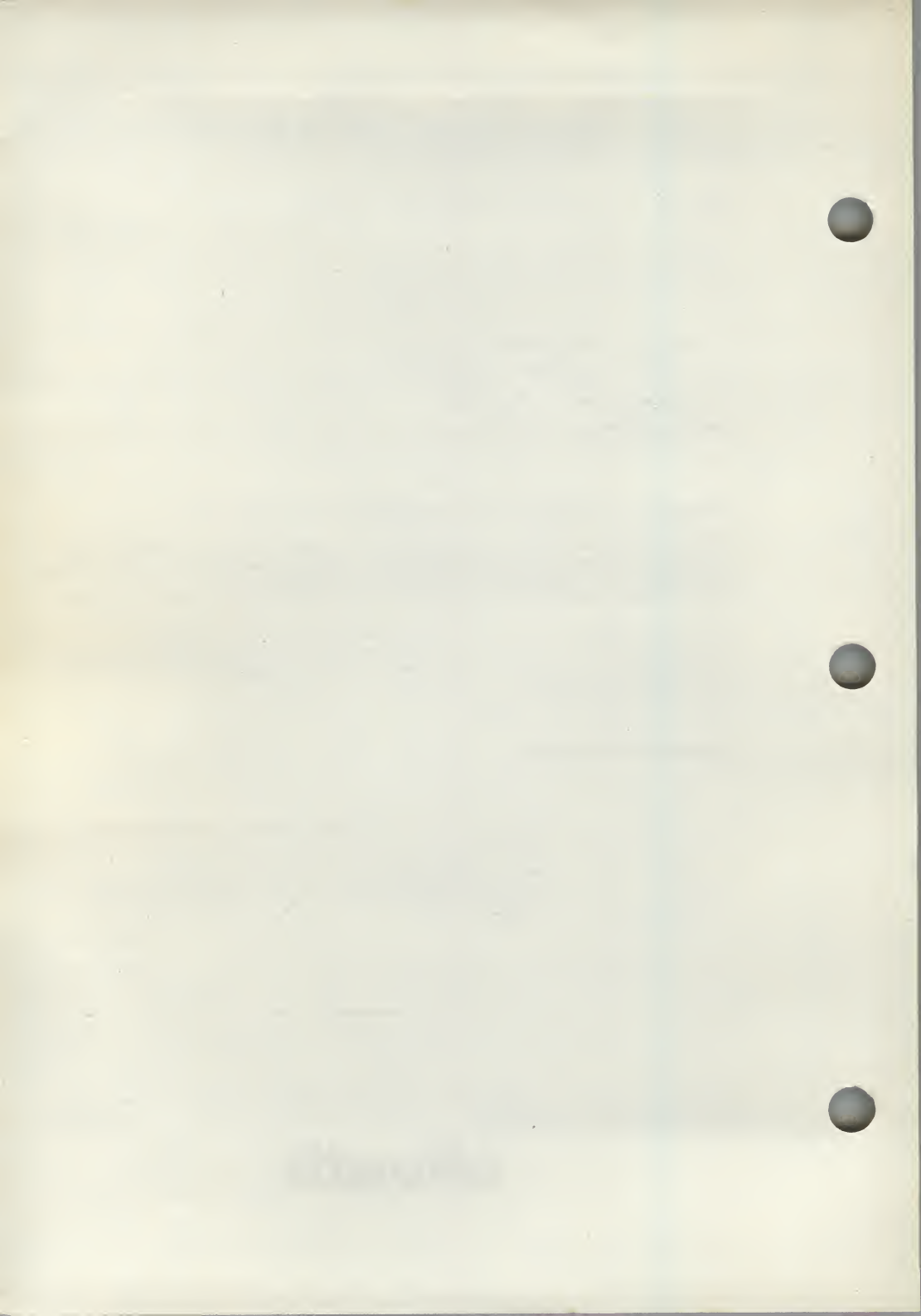
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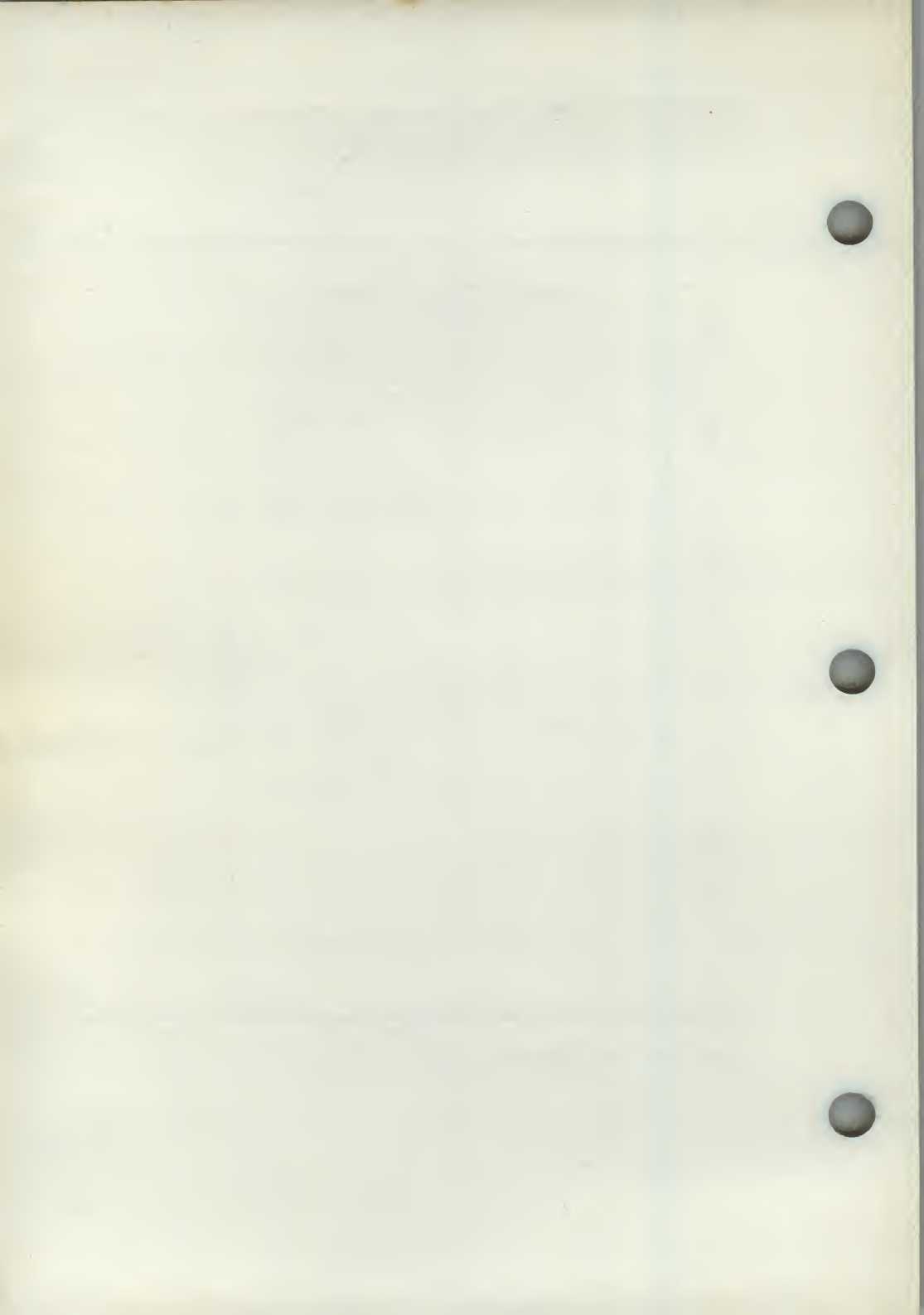
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and } "NATIONAL KEYBOARDS"
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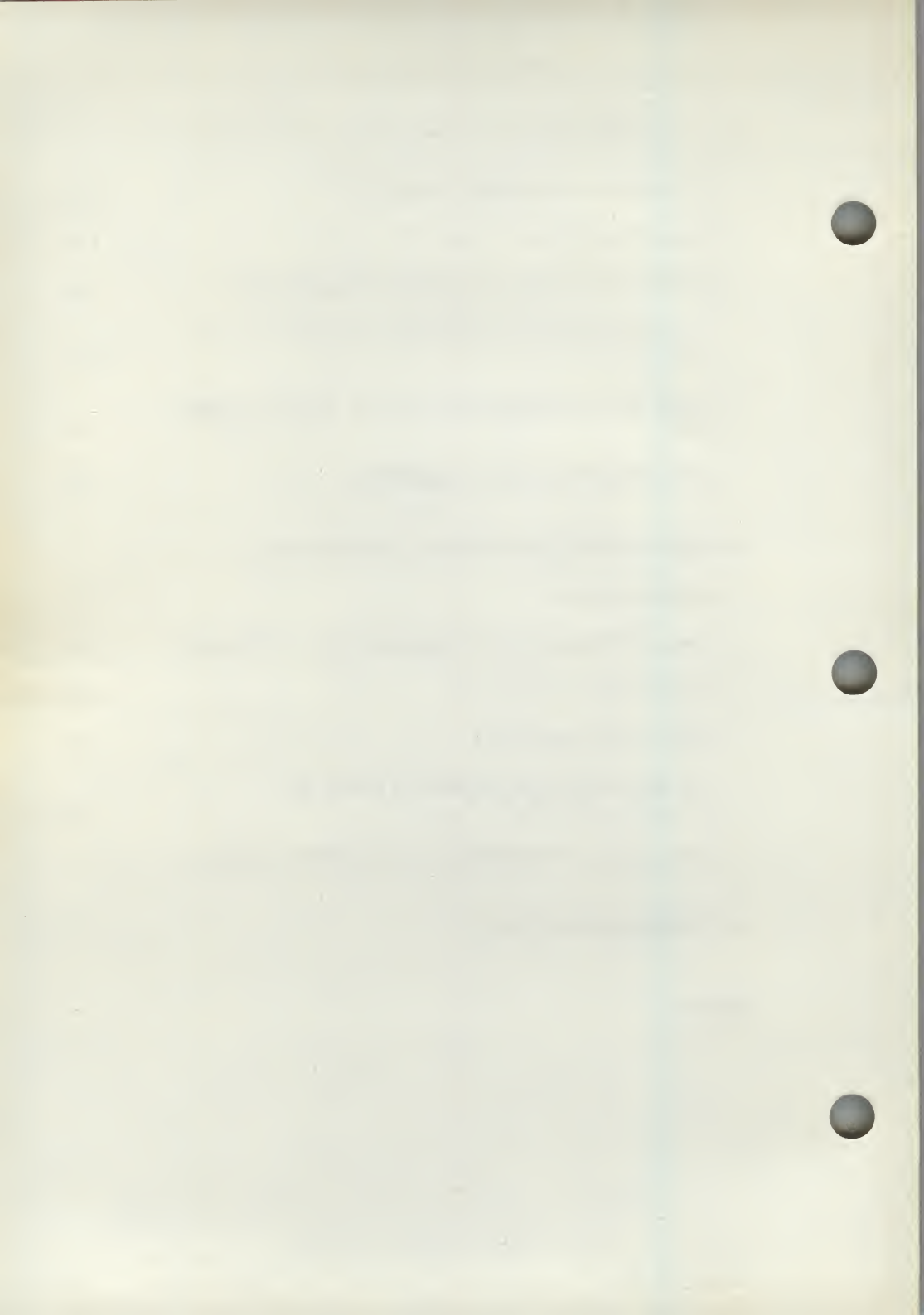
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PRESENTING MS-DOS AND GW-BASIC

FILE NAME	DESCRIPTION
EDLIN.COM	This external command calls the line editor. See Chapter 7 "Line Editor (EDLIN)" in the "MS-DOS User Guide".
EXE2BIN.EXE	This external command should only be used by programmers. See Chapter 5 "Commands" in the "MS-DOS User Guide".
FC.EXE	This external command is "File Compare" a highly sophisticated command for comparing either text or binary files. See Chapter 5 "Commands" in the "MS-DOS User Guide".
FDISK.COM	This external command is the Fixed Disk Partition Installation Program. It is completely composed of menus giving you options from which you have to choose. See Chapter 5 "Hard Disk Systems" for details.
HEXDUMP.COM	This external command is for programmers to dump files in hexadecimal.
LINK.EXE	This external command is for programmers to convert object files to executable files.
NORDIC.COM	This external command is the equivalent of "GRAFTABL" for Scandinavian Countries. See "GRAFTABL" in the previous table.

FILE NAME	DESCRIPTION
PORTUGAL.COM	This external command is the equivalent of "GRAFTABL" for Portugal. See "GRAFTABL" in the previous table.
RESTORE.COM	This external command is for restoring files from diskette to hard disk, which were backed-up using "BACKUP".

PRESENTING GW-BASIC A LANGUAGE FOR ALL TYPES OF USERS

QUESTION 1 : DO YOU KNOW HOW TO PROGRAM?

If YES Go To Question 2

If NO Read The Following Paragraph

Have you always wanted to have a go at programming? Yes? Well here is your chance. GW-BASIC is so simple to use that even the least technically-minded person can be programming in minutes. Take a look at the following program:

```

10 INPUT "DO YOU KNOW HOW TO PROGRAM" ; ANSWER$
20 IF ANSWER$ = "yes" THEN GO TO 70
30 IF ANSWER$ = "no" THEN GO TO 50
40 INPUT "TYPE yes OR no" , ANSWER$ : GO TO 20
50 PRINT "GW-BASIC IS THE LANGUAGE FOR LEARNING"
60 END
70 PRINT "GW-BASIC HAS EVERYTHING YOU NEED"
```

2. HOW TO INSTALL YOUR SOFTWARE

ABOUT THIS CHAPTER

This chapter introduces you to MS-DOS software installation. It describes diskette types and compatibility. It tells you how to start and finish your working session with the computer. It tells you how to set up your working system diskette or hard disk to support your national requirements.

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COMMAND FOR A
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INTRODUCTION

This installation guide is divided up into Chapters and Sections; each of which describes different procedures for different hardware configurations.

YOU ONLY NEED TO READ ABOUT YOUR HARDWARE CONFIGURATION

Read this "Chapter", then read the Chapters and Sections relevant to your hardware configuration. The Sections for different hardware configurations are marked as follows:

Floppy Disk Drive Based Systems

Read the Sections commencing:

If you have a Single Floppy Disk Drive...

Also read the Chapter "Floppy Disk Systems"

Dual Floppy Disk System

Read the Sections commencing:

If you have Two Floppy Disk Drives...

Also read the Chapter "Floppy Disk Systems"

External Diskette Drives

Read the Chapter "Configuring And Initializing MS-DOS".

Hard Disk Drive(s)

Read the Chapter "Hard Disk Systems".

BEFORE YOU BEGIN

DISK TYPES

Information is stored either on 3 1/2 inch or on 5 1/4 inch floppy disks or, if your system has one, on hard disk. This manual will refer to the former as diskettes and the latter as the hard or fixed disk. The term "disk" will be used to mean either diskette or hard disk.

Drive letters (A,B,C through Z) are the means by which commands can identify a particular drive.

The drive letter of the first diskette drive in any system is A. The drive letter of any second diskette drive is B. The drive letter of the first hard disk is C. The drive letters D through Z are used for additional hard disks, disk partitions, virtual disks and dummy drives.

For diskette drives, their capacity governs the type of diskette that can be used in that drive.

Diskettes can have a variety of capacities to hold data; as illustrated in the following tables. See your Installation and Operations Guide to check what Diskette capacities your Disk Drive(s) can read and write.

5 1/4 Inch Diskettes

The following table shows the different capacities a 5 1/4 inch diskette may have.

	Double Density 40 track (48 t.p.i.)		High Density 80 track (96 t.p.i.)
	8 sector	9 sector	15 sector
Single Sided	160 KB	180 KB	-
Double Sided	320 KB	360 KB	1.2 MB

Fig. 2-1 5 1/4 Inch Diskette Capacities

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5 1/4 Inch Diskette Compatibility

Standard formatting in Normal-Capacity drives is 40 tracks, 9 sectors per track. Formatting in High-Capacity drives is 80 tracks, 15 sectors per track. To format diskettes as 40 tracks, 9 sectors per track in High-Capacity drives use the **/4** switch. However note that Normal-Density diskettes written to in High-Capacity drives cannot be reliably read in Normal-Capacity drives. To prevent accidental writing to Normal-Density diskettes in a High-Capacity drive, write protect the diskette.

The following figure shows 5 1/4 inch diskette compatibility in different drives:

		DRIVE		
		Normal Capacity		High Capacity
		Single sided (160/180 KB)	Double sided (320/360 KB)	Double * sided (1.2MB)
D 48 I tpi S K E T T 96 E tpi S	Single sided	Read/Write	Read/Write	Read
	Double sided	—	Read/Write	Read/Write*
	Double sided	—	—	Read/Write

* Once written the diskette cannot be reliably read in Normal Capacity Double Sided Drives.

Fig. 2-2 5 1/4 Inch Diskette Type Compatibility in Different Capacity Drives

3 1/2 Inch Diskettes

These diskettes have 135 tracks per inch (t.p.i.) and can be formatted double sided with 80 tracks. Each track can be formatted with nine or 18 sectors. See the following table which shows the different capacities a 3 1/2 diskette may have.


			High Density 80 track (96 t.p.i. or 15 t.p.i.)	
			9 sector	18 sector
Double Sided			720 KB	1.44 MB

Fig. 2-3 3 1/2 Inch Diskette Capacities

Obviously you should not place 3 1/2 inch diskettes in a 5 1/4 inch drive, nor can you place 5 1/4 inch diskettes into a 3 1/2 inch drive.

3 1/2 Inch Diskette Compatibility

The following figure shows 3 1/2 inch diskette compatibility in different drives:

		DRIVE	
		720KB	1.44MB
D I S K S	720KB	Read/Write Format	Read/Write*
	1.44MB		Read/Write Format

* Once written the diskette cannot be reliably read in a 720KB drive.

Fig. 2-4 Diskette Type Compatibility in Different Capacity Drives

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It is possible to format 720KB diskettes in 1.44 MB drives (see the FORMAT command in Chapter 5 of the "MS-DOS User Guide") however this formatting is not as reliable as formatting 720 KB diskettes in a 720 KB drive. Therefore you are recommended to format 720 KB diskettes in 720 KB drives wherever possible. To prevent accidental writing to 720 KB diskettes in a High-Capacity drive, write protect the diskette.

If You Have An External Olivetti Floppy Disk Drive

This external floppy disk drive will be a 3 1/2 diskette drive for computers with 5 1/4 inch internal diskette drive(s); it will be a 5 1/4 inch diskette drive for computers with a 3 1/2 inch internal drives. The 3 1/2 inch external drive is called a Microbox. The 5 1/4 inch external drive is called a Minibox.

See the Software Manual included in the external drive kit for details of software installation.

WRITE PROTECT YOUR MASTER DISKETTES

The following important precaution prevents you from inadvertently destroying files on your master diskettes.

If you have 3 1/2 inch Diskettes...

Click the Write Protect Tag to the write protect position as shown in the following figure:

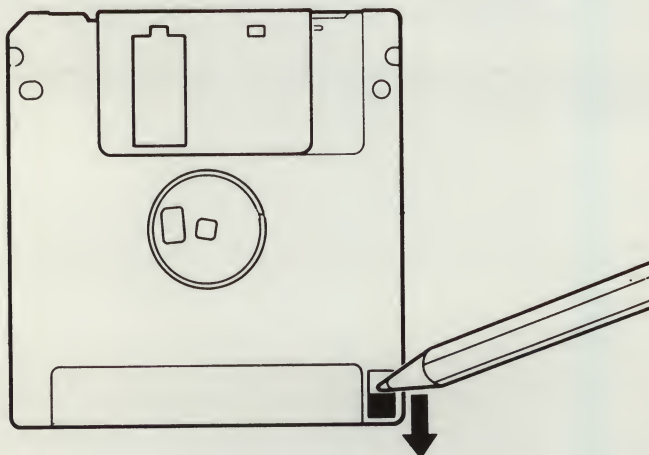


Fig. 2-5 How To Write Protect Your 3 1/2 inch Diskette

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If you have 5 1/4 inch Diskettes...

Wrap around a sticky write-protect label around the write protect notch as shown in the following figure:

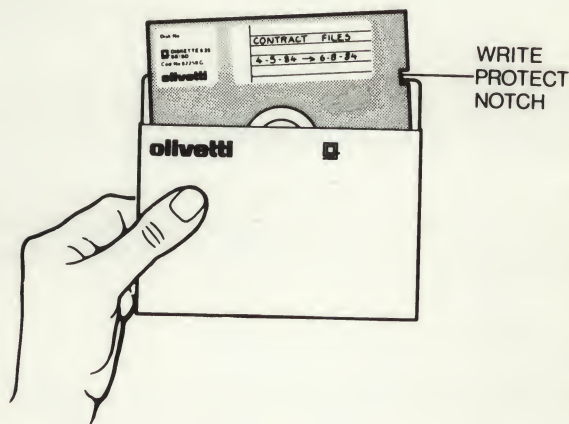


Fig. 2-6 How To Write Protect Your 5 1/4 inch Diskette

TURNING YOUR COMPUTER ON

After connecting the computer together as instructed in your "Installation and Operations Manual", locate the ON/OFF switch and switch it to ON. Diagnostic tests are now performed.

BOOTSTRAPPING YOUR COMPUTER

Place the master system diskette into the diskette drive of your Personal Computer called drive A. Close the drive door. Press the reset button.

You can perform a system reset either by pressing the **CTRL**, **ALT** and **DEL** keys simultaneously, or by pressing the system reset button. A system reset has the same effect as switching the Personal Computer off and back on again, but makes less demands on its components.

On the completion of the diagnostic tests, MS-DOS system files are loaded into memory. This process is known as "bootstrapping" or "booting up".

Lastly the following message appears:

A>

This is the MS-DOS system prompt. It indicates that MS-DOS is ready to accept commands from your keyboard.

If you subsequently prepare a hard disk for booting up MS-DOS, and you do not have a system diskette in drive A, your MS-DOS system will boot up from the hard disk, and the system prompt will appear as follows:

C>

If you have a hard disk, but have not prepared it for booting up MS-DOS, when you reset your computer without a diskette in the "A:" drive a message similar to the following will appear:

**Rom BASIC not available,
Press reset to re-boot**

Do as the message says, however you must press the "reset" button on your computer; a keyboard (soft) reset may not work.

HOW TO TERMINATE YOUR WORKING SESSION

You can bring your working session to an end in any one of two ways:

- by switching off the computer using the ON/OFF switch. Do **not** switch it off when the hard disk or the floppy disk is in use (this is usually indicated by a light).

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- by performing a system reset by pressing the **CTRL**, **ALT** and **DEL** keys simultaneously, or by pressing the hardware reset button. Do **not** reset when the hard disk or the floppy disk is in use, as you may corrupt your files.

THE DEFAULT DRIVE

The **A>** (or **C>**) is the MS-DOS prompt from the command processor. It tells you that MS-DOS is ready to accept commands. For systems that do not have a hard disk you will always load MS-DOS from drive A.

The **A** (or **C**) in the MS-DOS prompt indicates the default disk drive. This means that MS-DOS will search (and then the drives specified in the **PATH** environment variable) that drive for any commands or other file names that you enter. It will perform the specified task on that disk unless you specify a different drive.

For example, if following the **A>** prompt you type:

DIR
then press the **ENTER** key.

then the **DIR** command is executed on the default drive. But if you type:

DIR B:
then press the **ENTER** key.

the **DIR** command is executed on drive B, but drive A remains the default drive. To change the default drive to drive B you must type:

B:
then press the **ENTER** key.

and MS-DOS will respond:

B>

Subsequently, MS-DOS will search only the diskette in drive B until you specify a different default drive.

DRIVE LETTERS FOR SINGLE DRIVE SYSTEMS

If you have a single diskette drive system it is as though you had a system with two diskette drives, except that drive **A** and drive **B** represent two diskettes instead of two drives. You enter commands exactly as you would using a dual-drive system and MS-DOS will prompt you when you need to change diskettes.

PREPARING WORKING COPIES OF YOUR SYSTEM DISKETTES

It is strongly recommended that you prepare working copies of your MS-DOS System Diskette(s) and of your Keyboard Drivers Diskette. If your working copy becomes damaged, or if the files are accidentally erased, you will still have the files on your master diskette.

The DISKCOPY command copies the contents of one diskette onto another. You can use this command to duplicate the MS-DOS system diskette, or a diskette that contains your own files. DISKCOPY is the fastest way of copying a diskette because it copies the entire diskette in one operation, including MS-DOS system files if they exist. However, note that the DISKCOPY command can only be used where the source and target diskettes have the same capacity.

To make a copy of your MS-DOS master system diskette. First make sure that it is write protected. Then obtain a blank diskette of the same specification as the master diskette, write a label for it copying the label on the master diskette. Make sure the blank diskette is not write protected.

If you have a Single Floppy Disk Drive...

Insert the master diskette in drive A and type:

```
DISKCOPY  
then press ENTER
```

DISKCOPY prompts:

```
Insert source diskette in drive A:  
Strike any key when ready
```

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After you have struck any key, DISKCOPY then reads some or all of your source diskette (depending on the main memory capacity of your computer). DISKCOPY then prompts:

**Insert destination diskette in drive A:
Strike any key when ready**

DISKCOPY may prompt you in this way more than once, depending on the main memory storage capacity of your computer.

CAUTION:

You must make sure that you insert the correct source and target diskettes as DISKCOPY does not know the difference. Moreover, you are strongly recommended to write-protect your source diskette to avoid inadvertently overwriting it.

If you have Two Floppy Disk Drives...

Insert the master diskette in drive "A:" and the target diskette in drive "B:", at the "A>" prompt type:

**DISKCOPY A: B:
then press the ENTER key.**

DISKCOPY prompts:

**Insert source diskette in drive A:
Insert destination diskette in drive B:
Strike any key when ready**

As the copying commences a message similar to the following appears on the screen:

Copying 2 side(s), 9 sectors per track

If your target diskette was not formatted, DISKCOPY will format it as it copies. After MS-DOS has copied the diskette, MS-DOS displays:

**Copy complete
Copy another disk (Y/N)?**

Press **Y** (for Yes) if you wish to copy another diskette with the DISKCOPY command. If you press **N** (for No), the default drive prompt is displayed.

If DISKCOPY fails and outputs...

Drive types or diskette types not compatible

Then try formatting the target diskette to have the same capacity as the source diskette. See the following Section "How To Format Your Diskettes".

Keep Your Master Diskettes Safe

From now only use your working copies of MS-DOS and the Keyboard Drivers. Put your master diskettes away in a safe place and only use them for producing new working copies.

Note

If either of the diskettes that you are using has defective tracks, the DISKCOPY command will not work reliably. Use the COPY (or XCOPY) command to back-up your diskettes in these cases. COPY will skip over defective tracks. But note that some of the system files are "hidden" and cannot be copied using the COPY command. Therefore, before copying your system diskette using the COPY command you must format the target diskette using the FORMAT command with the **/S** option.

HOW TO FORMAT YOUR DISKETTES

You must format all new diskettes before they can be used by MS-DOS.

A blank diskette must be formatted with the FORMAT command. The FORMAT command changes the format of the diskette to one that MS-DOS can use. If the diskette is not already blank, formatting it will destroy any data that exists on the diskette.

HOW TO INSTALL YOUR SOFTWARE

Formatting places the tracks on a diskette and creates an empty directory for that diskette. The directory is the means by which MS-DOS keeps track of what is on the diskette.

If you type:

FORMAT B:
then press the **ENTER** key.

FORMAT issues the following message:

**Insert new diskette for drive B:
and strike ENTER when ready**

After you insert the new diskette in drive B and have pressed the **ENTER** key, formatting begins and the system keeps you informed of the progress of the **FORMAT** command by responding:

Head: x Cylinder: y

Where the head-value can be 0 or 1, and the cylinder-value increases from 0 to the number of cylinders formatted. When format has finished you will receive a message such as:

**362496 bytes total disk space
362496 bytes available on disk**

Format another (Y/N)?

Press **Y** to format another diskette. Press **N** to terminate the **FORMAT** program.

If you include **/S** at the end of the command line you will cause the **FORMAT** command to copy the system files to the target diskette as well as formatting that diskette. That is, it will give you a diskette from which you can boot MS-DOS. In this case, the system will typically respond:

**362496 bytes total disk space
41984 bytes used by system
320512 bytes available on disk**

If you include **/V** at the end of the command line you will be given the option to label the diskette. When formatting is complete you will be prompted:

volume label (11 characters. ENTER for none)?

You can enter any valid string up to 11 characters followed by **ENTER**. However, if you do not wish to assign a label to the diskette, simply press **ENTER**. For example you could assign the label **PROGRAMS** to a diskette containing programs. You can use such a label to check that you are using the correct diskette. The label will be displayed if you issue either a **DIR** command or a **VOL** command. If at a later stage you wish to give the diskette a new label use the **LABEL** command (see the "MS-DOS User Guide" for more details).

If you have a High-Capacity 5 1/4 inch Floppy Disk Drive...

Standard formatting in Normal-Capacity drives is 40 tracks, 9 sectors per track. Formatting in High-Capacity drives is 80 tracks, 15 sectors per track. To format diskettes as 40 tracks, 9 sectors per track in a High-Capacity drive use the following command:

FORMAT A: /4

However note that a Normal-Capacity diskette written to in a High-Capacity drive cannot be reliably read in Normal Capacity drives.

To prevent accidental writing to Normal-Capacity diskettes in a High-Capacity drive, write protect these diskettes.

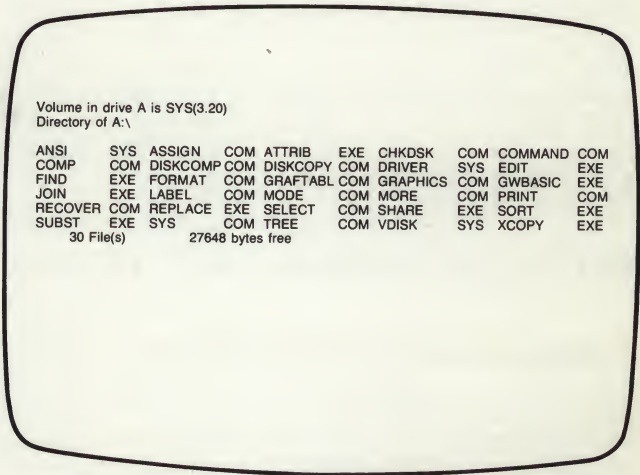
HOW TO LIST THE FILES ON A DISK

When a disk is formatted a directory is placed on that disk. This directory provides the means by which MS-DOS keeps track of the files on that disk. The **DIR** command enables you to display the contents of this directory and hence obtain a list of the files held on that disk. For example, if your copy of the MS-DOS system diskette is in drive "A:" and you type:

DIR A: /W
then press **ENTER**

HOW TO INSTALL YOUR SOFTWARE

MS-DOS will respond with a width-wise directory listing of all the files in the current directory on your MS-DOS system diskette. The display will look similar to this:



```
Volume in drive A is SYS(3.20)
Directory of A:\

ANSI      SYS  ASSIGN  COM  ATTRIB  EXE  CHKDSK  COM  COMMAND  COM
COMP      COM  DISKCOMP COM  DISKCOPY COM  DRIVER  SYS  EDIT      EXE
FIND      EXE  FORMAT  COM  GRAFTABL COM  GRAPHICS COM  GWBASIC  EXE
JOIN      EXE  LABEL   COM  MODE    COM  MORE    COM  PRINT    COM
RECOVER   COM  REPLACE EXE  SELECT  COM  SHARE   EXE  SORT      EXE
SUBST     EXE  SYS     COM  TREE    COM  VDISK   SYS  XCOPY     EXE

30 File(s)          27648 bytes free
```

Fig. 2-7 Directory Example

Two MS-DOS system files are "hidden" files and will not appear when you issue the DIR command.

You can also get information about any file on your disk by entering DIR and a file name. For example, if you have created a file named MYFILE.TXT on the disk in the default drive, and you type:

```
DIR MYFILE.TXT
then press ENTER
```

MS-DOS will respond with a display of the size of the file in bytes along with the date and time at which the file was created or last modified.

AUTOMATIC PROGRAM EXECUTION

If you want to run a specific program or list of programs automatically each time you start MS-DOS, you can do so with automatic program execution. For example, you may want to have MS-DOS display the names of your files each time you load MS-DOS.

When you start MS-DOS, the command processor searches for a file named AUTOEXEC.BAT in the root directory of the MS-DOS system disk. This is a batch file that MS-DOS will run each time MS-DOS is started. The "MS-DOS User Guide" tells you how to create an AUTOEXEC.BAT file.

SETTING UP YOUR DISK FOR NATIONAL SUPPORT

KEYBOARD AND SCREEN SUPPORT

When you start MS-DOS, input from the keyboard and output to the screen is handled by the BIOS (the Basic Input Output System). Initially this expects the keyboard to have USA characters on it. However your national keyboard may differ from the USA one, and the characters that appear on the screen may also differ. Your operating system disk needs to be set up so that it automatically reconfigures the BIOS to cope with your national requirements. See the "Keyboards and Fonts" Chapter for details of the programs which reconfigure the BIOS.

If you have a USA ASCII keyboard your system will automatically interpret the characters you type at the keyboard correctly. If you have a national version, however, you must install an appropriate "keyboard driver" each time you start up your system and possibly you need to install an extension to the built-in "font table". A keyboard driver provides the tables that tell the system what code to generate for each key pressed. A font table provides the characters that are displayed on the screen. The command GRAFTABL contains the font tables for extensions to the ASCII character set (see Chapter 5 of the "MS-DOS User Guide" for details of this command and see Appendix A of the "MS-DOS User Guide" for the tables illustrating the font). Your particular national keyboard may require a different command to load your national font (see the Chapter "Keyboards and Fonts").

In addition to national version tables, your system contains tables for the standard USA ASCII keyboards. As soon as you reboot your

HOW TO INSTALL YOUR SOFTWARE

system, the appropriate USA ASCII driver for your keyboard is reinstalled.

If you wish a specific keyboard driver and font to be loaded automatically immediately after bootstrap you must create an AUTOEXEC.BAT file with the national keyboard driver file name and font name as an instruction. Of course you have to ensure that the national keyboard driver is present on the system diskette you use to boot up your system. See Chapter 4 of the "MS-DOS User Guide" for more information on AUTOEXEC.BAT files.

Note that it is not necessary to enter the file extension ".COM" when calling a national keyboard driver.

Note also that your system diskette may already be customized, with the appropriate AUTOEXEC.BAT file and transferred keyboard driver, when you receive it. If you are in doubt, try those keys on the keyboard that differ between USA ASCII and your national version. You will soon see whether you have the correct driver installed.

Calling The USA ASCII Driver

When a national keyboard driver is installed, it is possible to call the USA ASCII keyboard version by using the three-key combination **CTRL ALT F1**. When you do this, you can return to the national keyboard version by using another three-key combination, **CTRL ALT F2**.

Such swapping between national and USA ASCII versions may be necessary in order to use certain application or communication packages.

Key combinations are summarized as follows:

KEY COMBINATION	ACTION
CTRL ALT F1	Calls the USA ASCII keyboard driver
CTRL ALT F2	Calls the national keyboard driver

MS-DOS COUNTRY SPECIFIC OPERATIONS SUPPORT

DOS can be configured for different country's requirements for

- date
- time
- currency symbol
- decimal separator

This is achieved by setting the variable

COUNTRY = *country-code*

in the CONFIG.SYS file. (See Appendix C in the "MS-DOS User Guide" for more details.)

DISPLAYING THE CHARACTER SET

To display the character corresponding to a given ASCII code (decimal 1-255), type:

ALT *number*

where *number* is the three-digit decimal code for the character. Use the numeric keypad **not** the numbers on the top row of the main body of the keyboard.

HOW TO INSTALL YOUR SOFTWARE

Note that some of the characters in the ASCII range 1-32 cannot be reproduced on the screen, using this technique. You cannot generate the ESC character (decimal 27) using this technique, use the Video Editor instead (see Chapter 6 of the "MS-DOS User Guide").

Appendix A of the "MS-DOS User Guide" shows the complete character set of extended ASCII.

If you have a Non USA Keyboard...

You may be having difficulty in typing certain characters, in particular: the : \ | characters. The following table gives the **ALT** key combinations to ameliorate this difficulty. Indeed using the keyboard reassignment facilities of ANSI Escape Sequences, it is possible to assign these keys to function keys (see Appendix B of the "MS-DOS User Guide").

To generate character	Press ALT and the numbers on the numeric pad
:	5 then 8
\	9 then 2
	1 then 2 then 4
~	1 then 2 then 6
.	9 then 6

THE SELECT COMMAND

If you have a Non USA Keyboard...

This command creates a working copy of the MS-DOS System with an AUTOEXEC.BAT and CONFIG.SYS that correctly initializes the computer for your keyboard and national conventions for time and date. See the Chapter "Keyboards and Fonts" and either the Chapter "Floppy Disk Systems" or the Chapter "Hard Disk Systems" for more details.

THE HARD DISK

See the "Hard Disk Systems" Chapter for more details of the following commands.

THE FDISK COMMAND

Before you can format your hard disk you have to create an MS-DOS partition. The FDISK Command calls a menu driven program, which takes you through the steps of creating one or more MS-DOS Partitions. Only the partition which corresponds with the "C:" drive can be made bootable.

THE FORMAT COMMAND

If you have a USA Keyboard...

The hard disk drive(s) have to be formatted before they can be utilized by MS-DOS. If you wish to have a bootable drive "C:", at the "A>" prompt type:

```
FORMAT C: /S /V  
then press ENTER
```

HOW TO INSTALL YOUR SOFTWARE

THE COPY COMMAND

If you have a USA Keyboard...

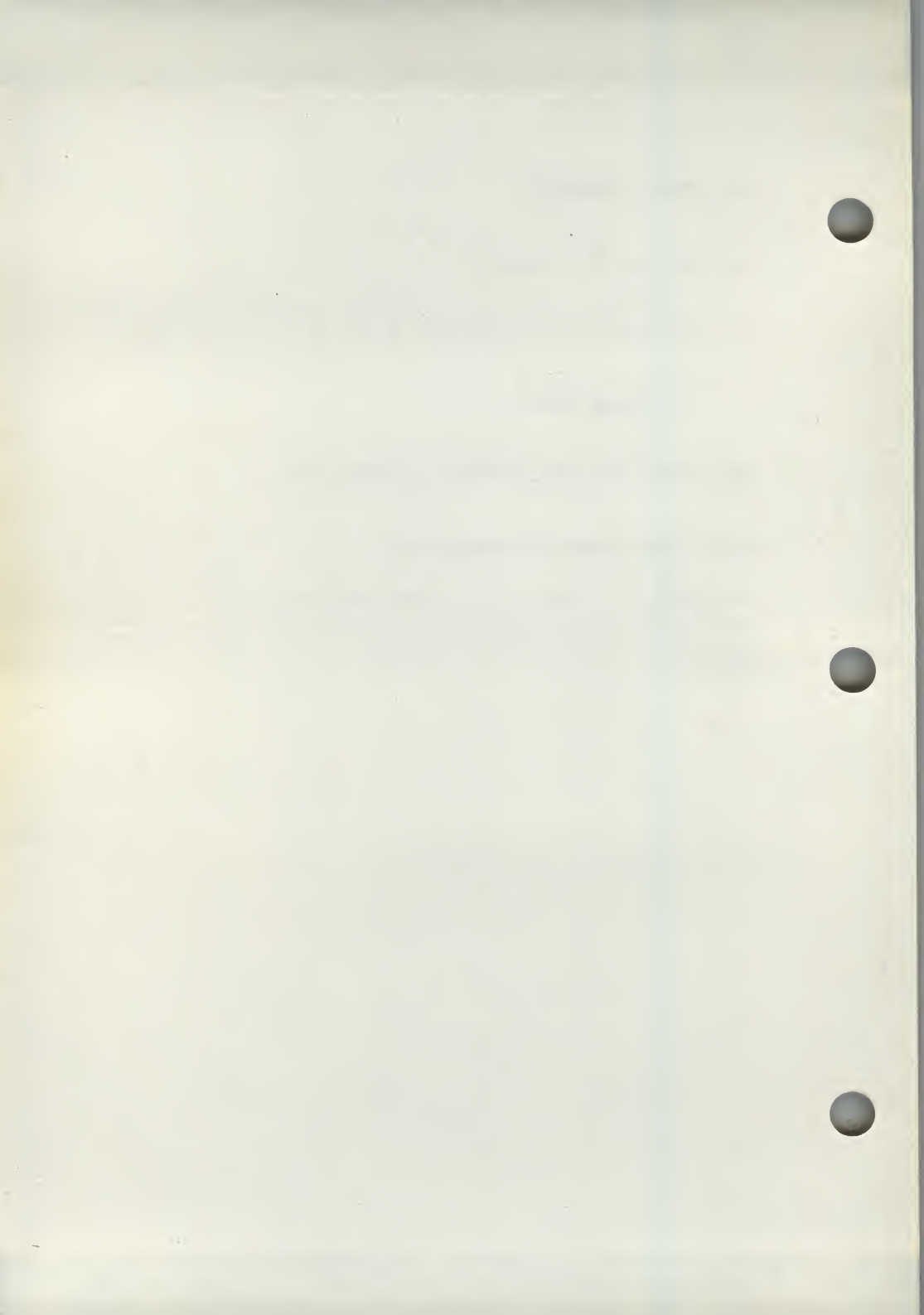
Copy the MS-DOS system disk (and supplementary disk) onto the hard disk using the following command. At the "A>" prompt, type:

```
COPY A:*. * C: /V  
then press ENTER
```

THE SELECT COMMAND FOR A HARD DISK

If you have a Non USA Keyboard...

Use the SELECT command to format and copy the system files from the MS-DOS System Diskette to the "C:" drive. See the "Keyboards and Fonts" Chapter and the "Hard Disk Systems" Chapter for more details.



3. KEYBOARDS AND FONTS

ABOUT THIS CHAPTER

This chapter lists all the Olivetti Personal Computer keyboards. It tells you how to call the keyboard driver and the font driver, which support your national requirements. It discusses the particularities of the various national keyboards.

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KEYBOARD DRIVERS	3-1		
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SETTING UP YOUR SYSTEM DISK	3-3		
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INTRODUCTION

When you start MS-DOS, input from the keyboard and output to the screen is handled by the BIOS (the Basic Input Output System). Initially this expects you to have a USA keyboard. However your national keyboard may differ from the USA keyboard, and the characters that appear on the screen may also differ.

If you have a non-USA keyboard, your operating system disk needs to be set up so that it automatically reconfigures the BIOS to cope with your national requirements.

If you have a USA ASCII keyboard your system will automatically interpret the characters you type at the keyboard correctly. If you have a national version, however, you must install an appropriate "keyboard driver" each time you start up your system and possibly you need to install an extension to the built-in "font table". A keyboard driver provides the tables that tell the system what code to generate for each key pressed. A font table provides the appearance of the character that appears on the screen.

KEYBOARD DRIVERS

When received, your system is configured to recognize the USA ASCII version of the keyboard. If you have a national keyboard you **MUST** execute the following procedure to define your keyboard to the system.

Refer to the following table to find the driver name corresponding to your national keyboard version.

NATIONAL VERSION	DRIVER NAME	FONT NAME
Belgium	KEYBBE *	GRAFTABL
Denmark	KEYBDA	NORDIC
France	KEYBFR	GRAFTABL
Alternative French	KEYBBE *	GRAFTABL
Germany	KEYBGR	GRAFTABL
Greece	GREEK	
Italy	KEYBIT	GRAFTABL
Norway	KEYBNO	NORDIC
Portugal	KEYBPO	PORTUGAL
Spain International	KEYBSP	GRAFTABL
Spain	SPAIN1	
Sweden/Finland	KEYBFS	GRAFTABL
Swiss-French	KEYBSF	GRAFTABL
Swiss-German	KEYBSG	GRAFTABL
United Kingdom	KEYBUK	GRAFTABL
United States	—	GRAFTABL

* For New Industry Standard 102 Key Keyboard only.

Remove the MS-DOS system diskette and insert the diskette containing the Keyboard Drivers into drive "A:". At the "A>" prompt, type:

KEYBxx
then press ENTER

or

GREEK
then press ENTER

or

SPAIN1
then press ENTER

Where

xx corresponds to the two letters that specify your keyboard type.

For Example

KEYBIT

KEYBOARDS AND FONTS

FONTS

A font table provides the characters that are displayed on the screen. The command listed in the "FONT NAME" column in the above table loads your national font.

For Example

If you have an Italian keyboard, at the "A>" prompt, type:

```
GRAFTABL  
then press ENTER
```

GRAFTABL contains the font tables for extensions to the ASCII character set (see Chapter 5 of the "MS-DOS User Guide" for details of this command and see Appendix A of the "MS-DOS User Guide" for the tables illustrating the fonts). Your particular national keyboard may require a different command to load your national font. Enter the font name corresponding to your keyboard.

SETTING UP YOUR SYSTEM DISK

To save typing in the above commands to call the keyboard driver and font every time you reset your computer, it is better to have the commands in an AUTOEXEC.BAT file. You must make sure that the national keyboard driver is present on the system diskette you use to boot up your system.

Note also that your system diskette may already be customized, with the appropriate AUTOEXEC.BAT file and transferred keyboard driver, when you receive it. If you are in doubt, try those keys on the keyboard that differ between USA ASCII and your national version. You will soon see whether you have the correct driver installed.

THE SELECT COMMAND

This command creates a working copy of the MS-DOS System with an AUTOEXEC.BAT and CONFIG.SYS that correctly initializes the computer for your keyboard and National conventions for time and date. The following table shows the *keyboard-type* and *country-code* you will need as parameters to the SELECT command:

NATIONAL VERSION	<i>country-code</i>	<i>keyboard-code</i>
Denmark	045	DA
France	033	FR
Germany	049	GR
Italy	039	IT
Norway	047	NO
Portugal	351	PO
Spain International	034	SP
Sweden	046	FS
Swiss-French	041	SF
Swiss-German	041	SG
United Kingdom	044	UK
United States	001	US

Tab. 3-1 Country Code and Keyboard Code For The Select Command

The specified *country-code* becomes a parameter to the COUNTRY command in the CONFIG.SYS; this command enables MS-DOS to use the correct conventions for national time, date, currency and decimal separators.

The *keyboard-code* is a two letter code representing the last two letters of the name of the driver. *keyboard-code* does not exist for Greece and Spain National, therefore for these countries it is not possible to use SELECT. Note also that for the United States of America the *keyboard-code* is **US**, however there is no corresponding driver. This is because the USA driver is built into the computer's BIOS.

If you have a Floppy Disk Based System...

Chapter 4 "Floppy Disk Systems" tells you how to use the SELECT command to install MS-DOS on floppy disk.

If you have a Hard Disk Based System

Chapter 5 "Hard Disk Systems" tells you how to use the the SELECT command to install MS-DOS on your hard disk.

KEYBOARDS AND FONTS

The following table lists the Olivetti New Industry Standard keyboards:

TYPE	NATIONALITY	NUMBER OF KEYS	COMMENT
New Industry Standard	Belgium	102	
	Denmark		
	France		
	French Alternative		
	Germany		
	Greece		
	Italy		
	Norway		
	Portugal		
	Spain		
	Spain International		
	United Kingdom		
	USA	101	

MULTI-CHARACTER KEYS

On some National keyboards, there are a number of keys marked with more than two symbols.

Depending on the position of the symbol on the key, there is a specific combination of other, special keys that must be pressed and held down before pressing the particular key you want.

There is a total of five possible symbol positions on any key marked with more than two symbols, although not all of them will necessarily be found on all such keys.

Position 1 On a key marked with three or more symbols on the top, this is the symbol on the bottom left-hand corner of the key.

It is selected by pressing the **KEY** by itself.

Position 2 Again, for the same type of key, this is the symbol marked on the top left-hand corner of the key.

It is selected by pressing **SHIFT KEY** simultaneously.

Position 3 This is the symbol marked on the bottom right-hand corner of the key.

It is selected by pressing **ALT KEY** simultaneously.

Position 4 This is the symbol marked on the top right-hand corner of the key.

It is selected by pressing **ALT SHIFT KEY** simultaneously.

Position 5 This is the symbol marked on the front of some keys.

It is selected by pressing **ALT CTRL KEY** simultaneously. Unless you have the Spanish National keyboard (keyboard driver name: SPAIN1), in this case, the symbol marked on the front of a key is selected by pressing **ALT SHIFT KEY** simultaneously.

Note that if you have the New Industry Standard 101/102 Key Keyboard you can press **ALT GR** instead of **ALT CTRL** or **ALT SHIFT** in the case of Spain.

Multi-character keys Some keys generate up to five characters. The position of these five characters on the key is shown in the following figure:

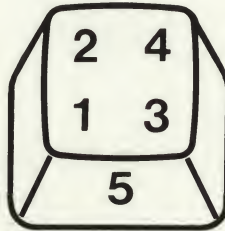


Fig. 3-2 Multi-character Key Top

SWISS-GERMAN/SWISS-FRENCH KEYBOARD

The Swiss Keyboard supports both Swiss-French and Swiss-German requirements. However, to use the keyboard in one mode or the other, the appropriate keyboard driver must be loaded. Please note that although some keys have four symbols marked on them, only one pair of them will be active according to which keyboard driver you have loaded.

Thus, if you have loaded the Swiss-German keyboard driver, the two symbols on the left-hand side of the key will be selected by following the instructions given for symbol positions 1 and 2.

If you have loaded the Swiss-French keyboard, the two symbols on the right-hand side of the key will be selected, but nevertheless you should still follow the instructions given for symbol positions 1 and 2.

The drivers affect the following three keys, as illustrated:

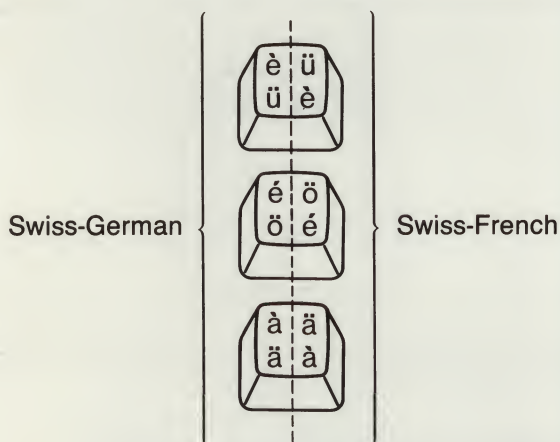


Fig. 3-3 Swiss Keyboard Variations

GREEK KEYBOARD

The Greek keyboard allows the entry of Latin as well as Greek characters. At start-up the keyboard is set to enter Latin characters. To change from Latin character entry to Greek character entry, press down the **ALT** and **ENTER** keys simultaneously. To change back, press the same keys again simultaneously: **ALT** and **ENTER**.

PORTUGAL KEYBOARD

The characters ü and Ü with diaeresis points are generated by pressing the tilde key followed by the lower case or upper case **U** as required.

Except on the New Industry Standard 102 Key Keyboard, upon which you must press the dead key “~” followed by the lower case or upper case **U** as required.

DEAD SYMBOLS

Some National keyboards support certain symbols that can be used only in conjunction with another key they cannot be used on their own. Such symbols are called "dead symbols". The dead symbols are shown below.

‘ ’ ^ ¨ ~

These symbols are used to generate lesser-used accented characters not available as separate keyboard characters.

For each keyboard version, there is a set of valid dead symbol combinations. To generate an accented character, the dead symbol must be pressed first; MS-DOS then checks the next character entered to ensure that a valid combination has been entered. If the combination is invalid the symbol and the character will be displayed on the screen, and the system will generate a "beep". (Note that in this case, the symbol ~ will appear on the screen as ■ .)

The following table shows the possible dead symbol/character combinations for each of the National keyboard versions:

KEYBOARD	DEAD SYMBOLS SUPPORTED	VALID CHARACTERS
FRANCE	" ^	ä Ä ë ï ö Ö ü Ü ÿ â ê î ô û
GERMANY	' `	á é É í ó ú à è ì ò ù
GREECE	' " "	ά έ ή ί ό ύ ώ ï ü Á É Η Í Ó Υ Ω
PORTUGAL	' ` ^ ~	á é í ó ú Á É Í Ó Ú à è ì ò ù À È Ì Ò Ù â ê ô Â Ê Ò ã õ ñ Ã Õ Ñ ü Ü
SPAIN INTERNATIONAL, NORWAY, DENMARK, SWEDEN/FINLAND NORWAY	' ` ^ " "	á é É í ó ú à è ì ò ù â ê î ô û ä ë ï ö ü ÿ Ä Ö Ü
SPAIN	' ` " "	á é í ó ú Á É Í Ó Ú à è ì ò ù À È Ò ä ë ï ö ü ÿ Ä Ö Ü
SWISS-FRENCH SWISS-GERMAN	' ` ^ " ~	á é í ó ú É à è ì ò ù â ê î ô û ä ë ï ö ü ÿ Ä Ö Ü ñ Ñ

" New Industry Standard 102 Key Keyboard only.

KEYS WITH INVISIBLE CHARACTERS

The National versions of the M24 Keyboard 2 for France, Germany, Italy, Spain International and Switzerland support characters not shown on the keyboard, but which can be generated.

KEYBOARDS AND FONTS

These invisible characters, and the key combinations required to generate them, are listed in the following table:

COUNTRY	INVISIBLE KEY	KEY COMBINATION
FRANCE		ALT SHIFT > \
	{	ALT SHIFT * [
	}	ALT SHIFT & \]
	~	ALT SHIFT + =
GERMANY		ALT SHIFT > \
	{	ALT SHIFT * ' [
	}	ALT SHIFT ^ #]
	~	ALT SHIFT ` ,
ITALY	'	ALT SHIFT ü @
		ALT SHIFT > \
	{	ALT SHIFT & \$ [
	}	ALT SHIFT § *]
	~	ALT SHIFT + -
	'	ALT SHIFT = ï @
SPAIN INTERNATIONAL		ALT SHIFT > \
	{	ALT SHIFT * + [
	}	ALT SHIFT § ~]
	'	ALT P
SWISS-FRENCH	'	ALT SHIFT ü é @
SWISS-GERMAN	'	ALT SHIFT è û @

INTRODUCTION

The kind of diskette you can use depends upon the drive type. It is essential to use the correct type of diskette for the drive and the kind of operation that is going to be performed. See Chapter 2 for details of the kind of diskettes you can use in your floppy disk drives. Also see Chapter 2 for information on how to turn your machine on, insert a system diskette into the "A:" disk drive and boot-strap the operating system. If you have followed these instructions, after the copyright notice has been displayed you should see the MS-DOS prompt:

A>

Place the existing System diskette you wish to upgrade in drive "B:".

If you have a Single Floppy Disk Drive...

Follow the instructions as though you have two disk drives; the source is logical drive "A:" and the target is logical drive "B:". You will be prompted to insert the diskette for drive "A:" or for drive "B:". You are advised to write-protect the source diskette. Be careful to insert the correct diskette when prompted.

TO UPGRADE AN EXISTING SYSTEM DISKETTE TO VER. 3.20

USING THE SYS COMMAND TO INSTALL MS-DOS VER. 3.20 HIDDEN FILES

Having boot-strapped the computer with the MS-DOS Ver. 3.20 System disk, at the "A>" prompt, type:

SYS B:
then press **ENTER**

If it is possible to copy the hidden system files to the diskette in drive "B:", you will see the following message:

System transferred

Sometimes, however it is not possible to transfer the new hidden system files to the target diskette. In this case you will see the message:

SYS cannot install MS-DOS on this disk

or

Not enough room for MS-DOS on this disk

If you get either of these two messages, the target disk will not have been corrupted. Instead install MS-DOS Ver. 3.20 on another diskette as instructed in the Section "To Install MS-DOS Ver. 3.20 On A New System Diskette".

USING THE REPLACE COMMAND TO UPDATE AN EXISTING FLOPPY DISK

At the "A>" prompt, with the new MS-DOS System disk in the "A:" drive, type:

```
REPLACE A:*. * B:\ /P /S  
then press ENTER
```

The REPLACE Command will read the files on the target diskette and will prompt you as to whether to replace them, if a file of the same name exists on the source diskette. For example:

Add AUTOEXEC.BAT? (Y/N)

For AUTOEXEC.BAT, it will probably be advisable to answer N. For COMMAND.COM and other MS.DOS files answer Y. REPLACE will confirm replacement:

Replacing B:\COMMAND.COM

HARD DISK SYSTEMS

This makes the chosen partition active:

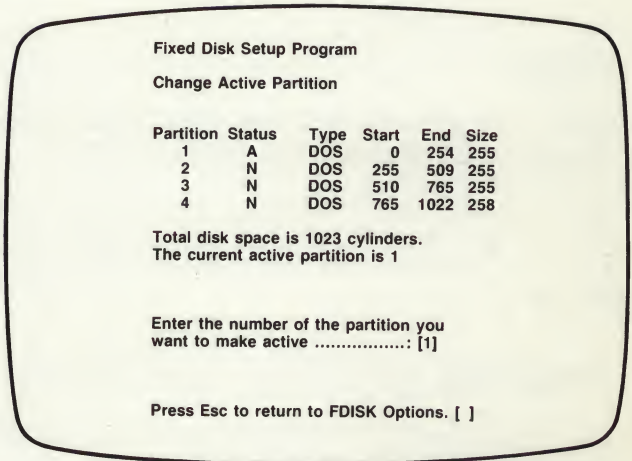


Fig. 5-22 Active Partition Status Display For Multiple Partitions

3. Press **ESC** to return to the main FDISK options menu.
4. Press **ESC** to again to return to MS-DOS.

The following message then appears:

**An MS-DOS partition has been changed.
A system reset will occur to update MS-DOS**

**Insert MS-DOS diskette in drive A.
Press ENTER when ready.....: []**

5. Do as the message instructs with your MS-DOS System diskette in drive "A:".

If you have four MS-DOS partitions, with only one fixed disk drive. The active partition is "C:". The other partitions are in ascending order of partition numbers: "D:", "E:", and "F:".

Warning

ONLY USE MS-DOS SYSTEM RELEASES WHICH SUPPORT OLIVETTI ENHANCED DISK INSTALLATION.

Bootstrapping old or non-Olivetti releases may corrupt information in MS-DOS partitions. In particular this corruption will occur, if your first MS-DOS partition crosses or is outside the 32MB boundary of the fixed disk.

FDISK FOR TWO FIXED DISK DRIVES

INTRODUCTION

If your Olivetti Personal Computer has two fixed disk drives, there are several steps you will need to take before you can use them with MS-DOS.

The MS-DOS command you will use to set up your fixed disks is called the FDISK command. It uses a series of video displays and prompts that guide you through the operations step by step. The example used is based on two 20MB hard disks. Different sized disks will result in different sizes shown on the display.

A. KEYBOARD LAYOUTS

ABOUT THIS APPENDIX

This appendix contains figures showing the layout of all the Olivetti Personal Computer Keyboards.

CONTENTS

Industry Compatible 83 Key Keyboard

Denmark	A-1	France	A-14
Finland Sweden	A-2	Germany	A-15
France	A-3	Greece	A-16
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Norway	A-5	Norway	A-18
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KEYBOARD LAYOUTS

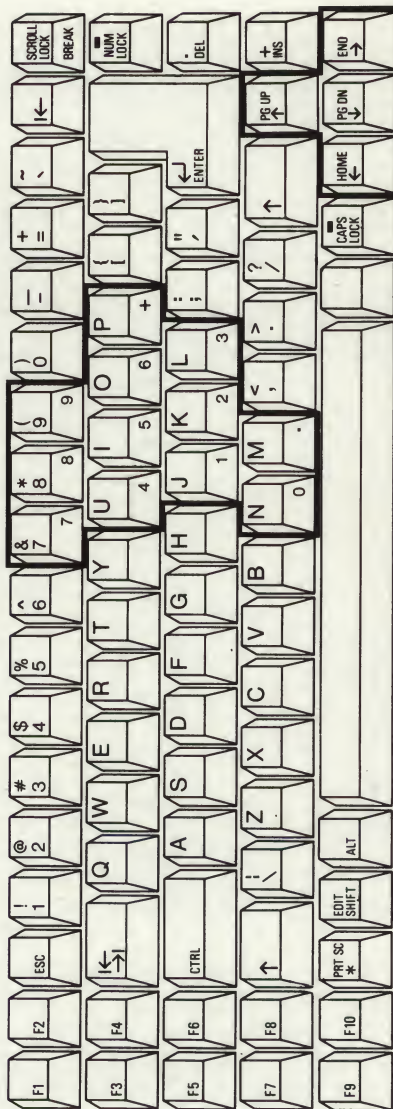


Fig. A-49 USA Olivetti M15 Keyboard

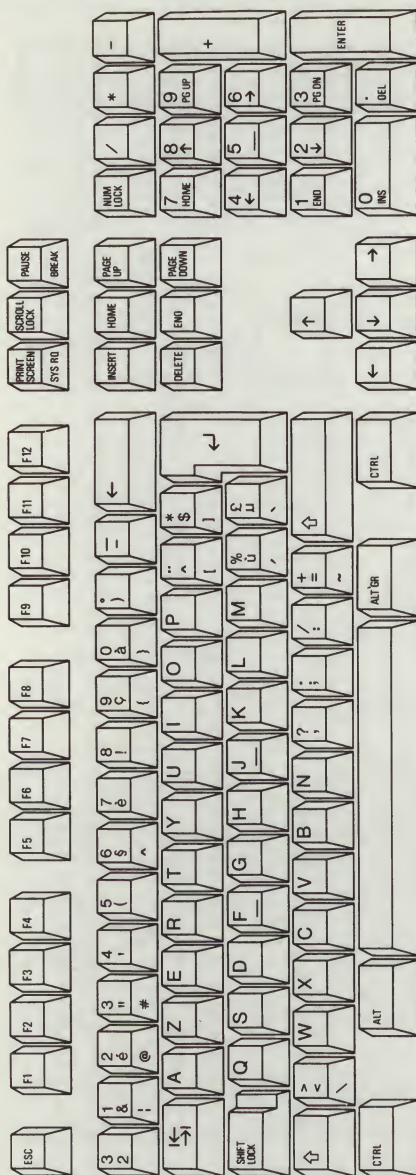
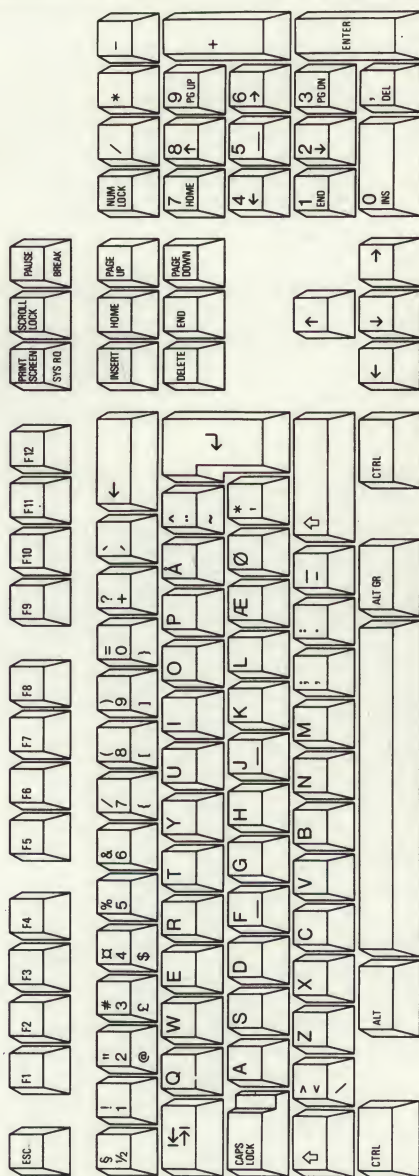


Fig. A-50 Belgium New Industry Standard 102 Key Keyboard

Fig. A-51 Denmark New Industry Standard 102 Key Keyboard



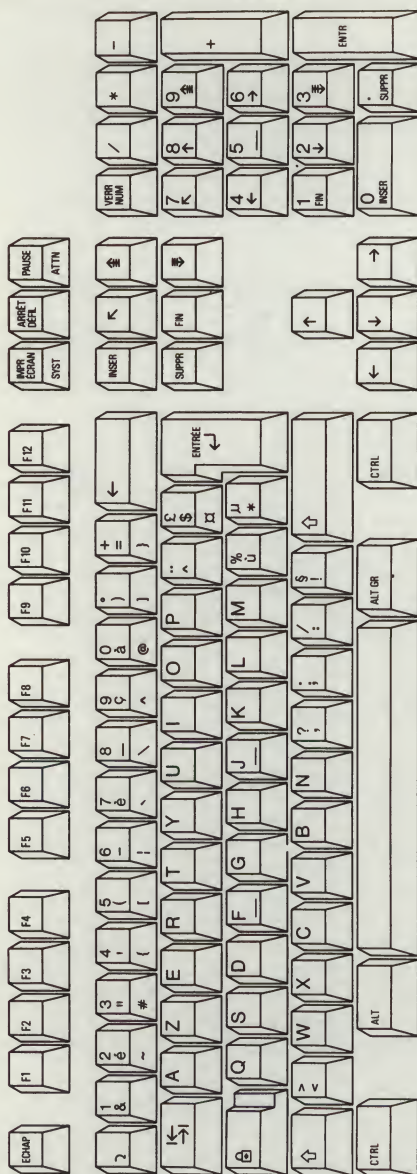


Fig. A-52 France New Industry Standard 102 Key Keyboard

KEYBOARD LAYOUTS

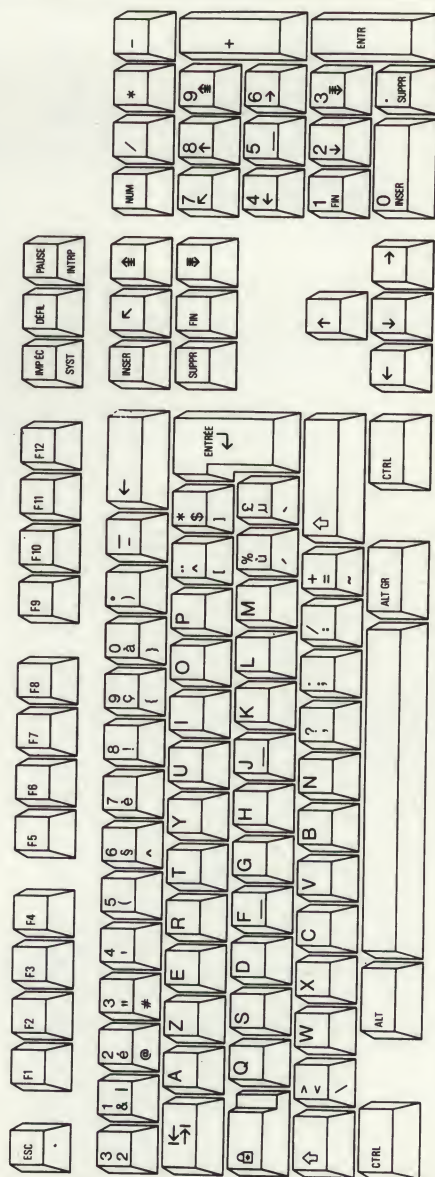


Fig. A-53 French Alternative New Industry Standard 102 Key Keyboard

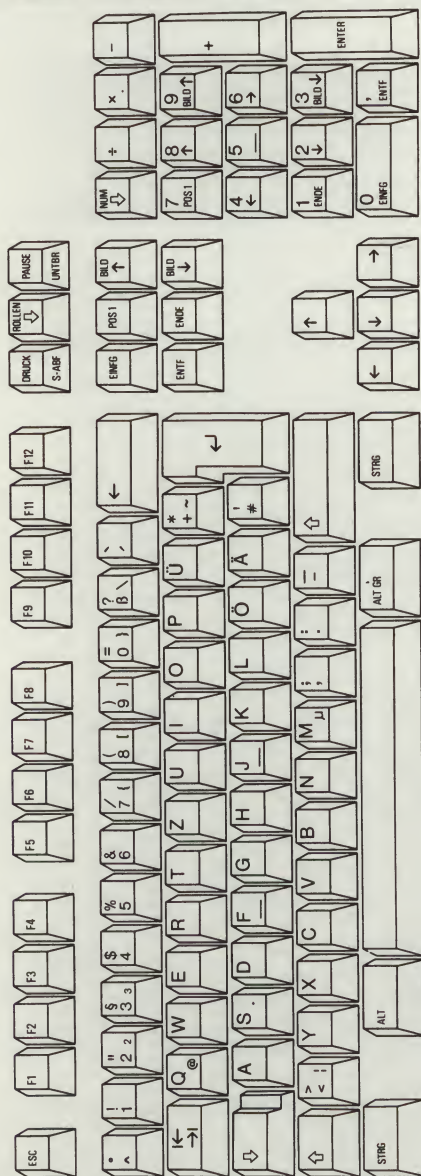


Fig. A-54 Germany New Industry Standard 102 Key Keyboard

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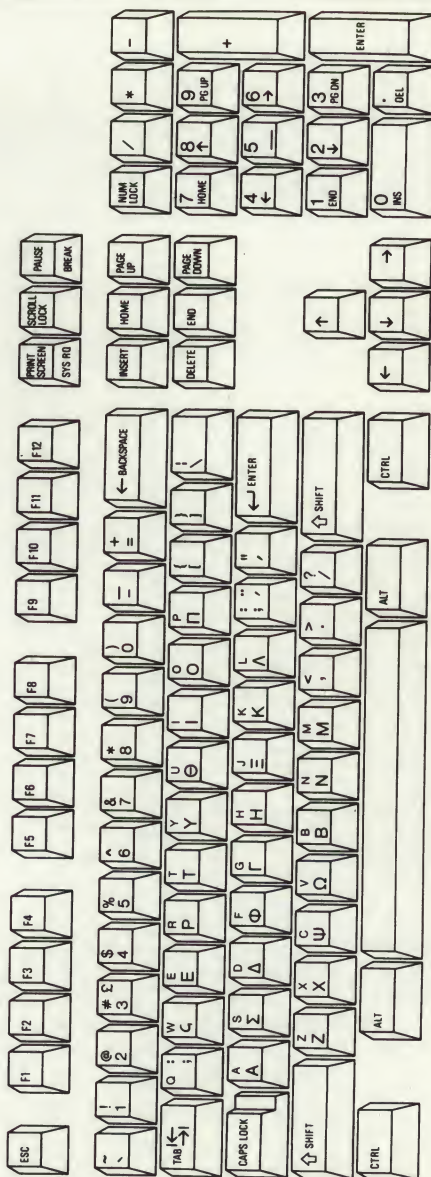


Fig. A-55 Greece New Industry Standard 102 Key Keyboard

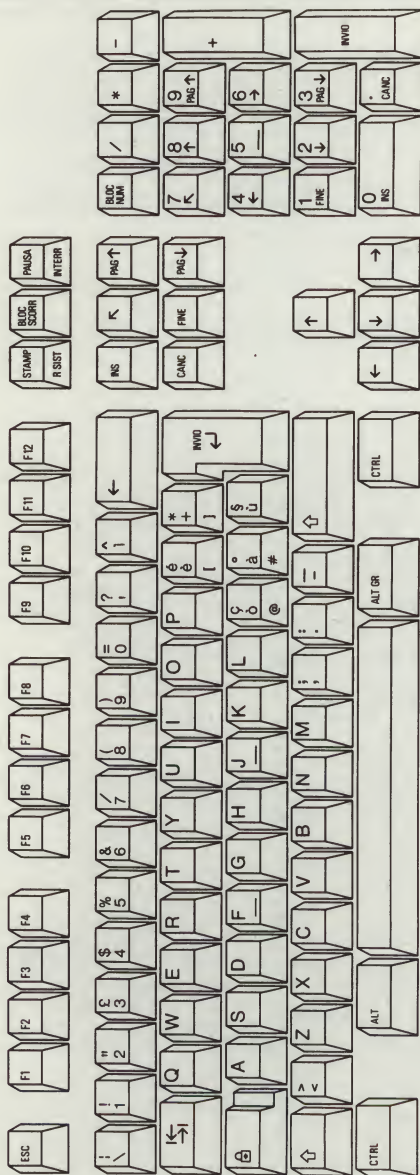


Fig. A-56 Italy New Industry Standard 102 Key Keyboard

KEYBOARD LAYOUTS

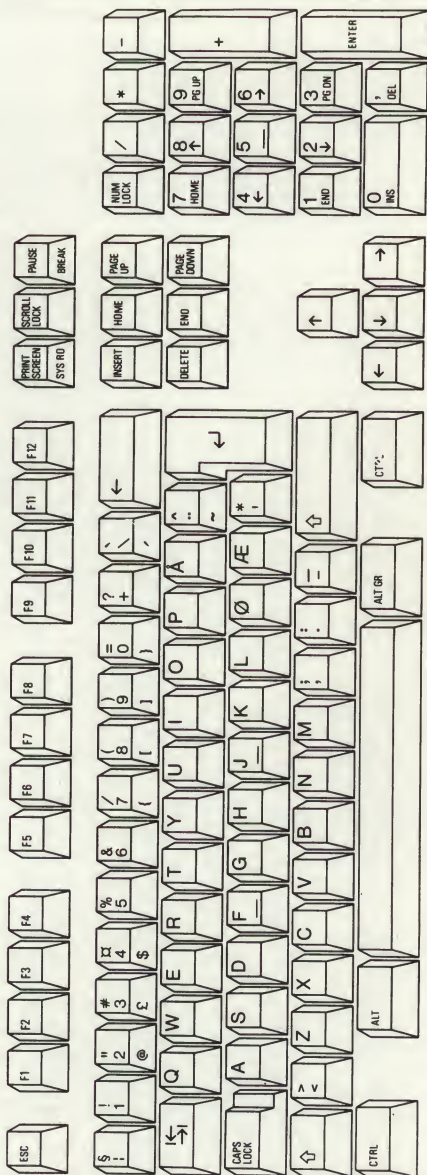


Fig. A-57 Norway New Industry Standard 102 Key Keyboard

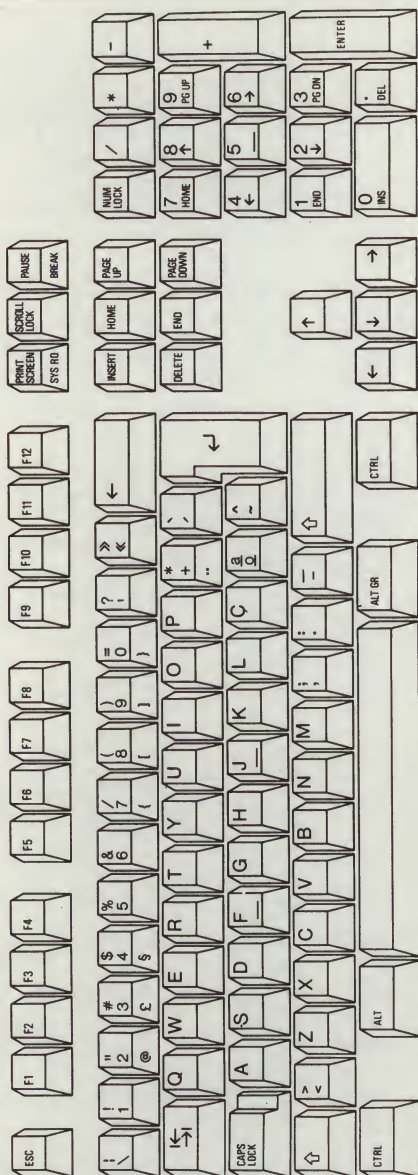


Fig. A-58 Portugal New Industry Standard 102 Key Keyboard

KEYBOARD LAYOUTS

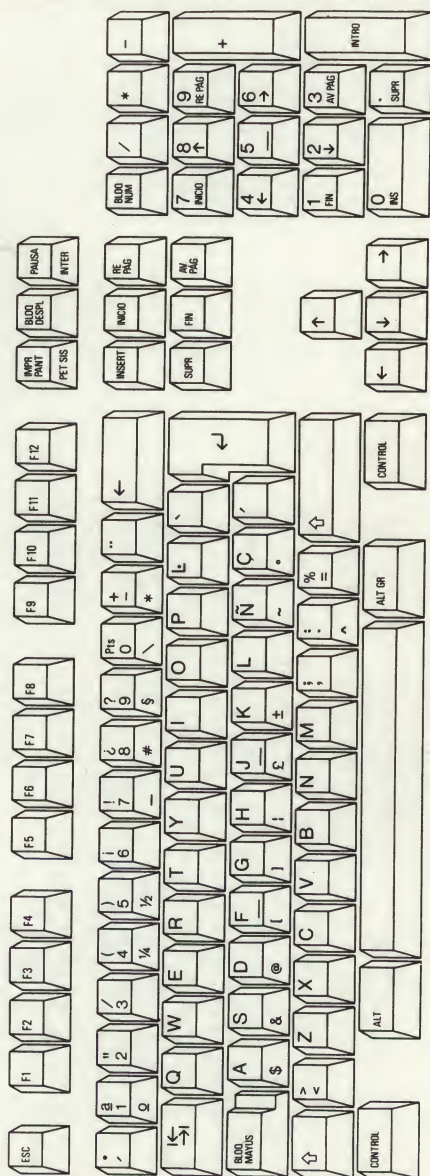


Fig. A-59 Spain New Industry Standard 102 Key Keyboard

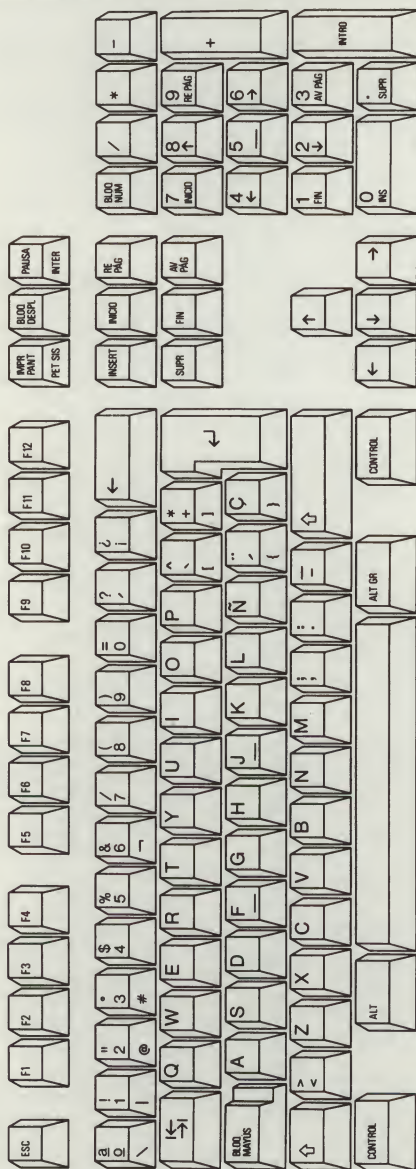


Fig. A-60 Spain International New Industry Standard 102 Key Keyboard

KEYBOARD LAYOUTS

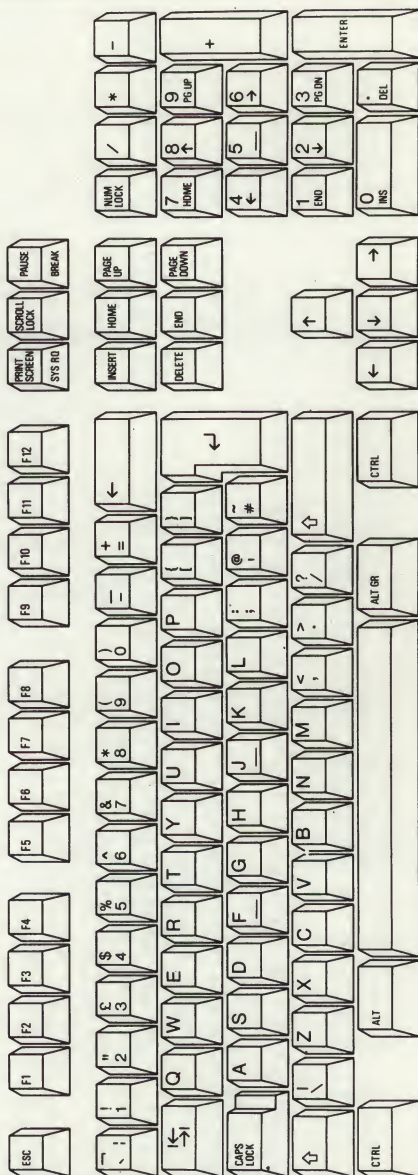


Fig. A-61 United Kingdom New Industry Standard 102 Key Keyboard

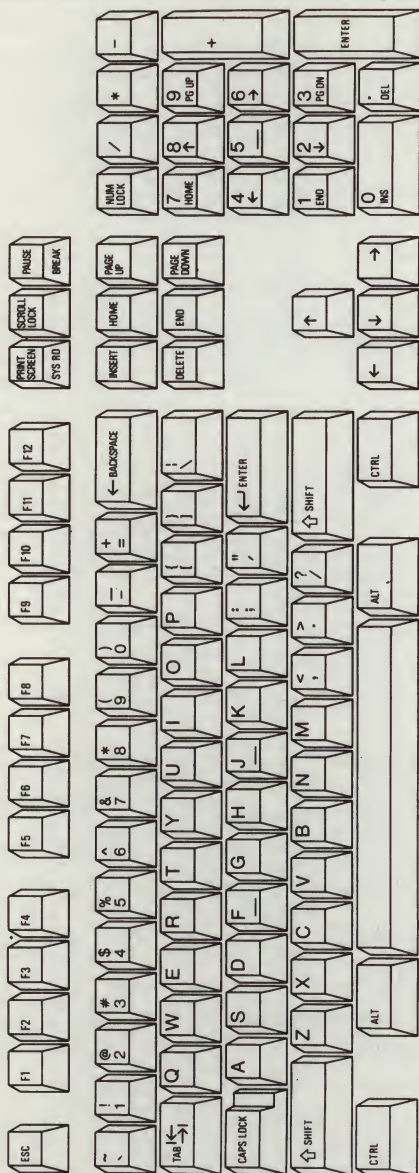


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